



# POTTERY

## A Hallmark of Prehistoric Agriculturalists

The appearance of pottery coincides with the rise of farming in many parts of the world, which suggests a strong functional link between the two. This link is not inevitable; some cultures that have never farmed used pottery jars for water or preserved foods. But for the most part, pots were—and still are—used for cooking.

Normally we don't think about clay pots as tools, but that's exactly what they were. The third definition of "tool" in my dictionary is "anything that serves as a means to get something done." Pottery vessels served both as storage tools and cooking tools. But the process of making pots had to be developed and perfected before they were widely adopted.

For a long time people knew that certain clays become hard and hold shapes permanently when exposed to high temperatures. Fired clay figurines and beads have been found in Kansas sites that are 5,000 years old. People

could have taken advantage of these properties of clay to make pots, and yet for years they didn't. In fact, they already had containers that served them well. For storage, preserved foods were kept in baskets or skin bags, and liquids were held in skin bags or in gourds. For cooking, meat was roasted over a fire or boiled along with roots and greens in a skin bag to which water and hot stones were added.

When large amounts of food needed to be cooked, an earth oven was built. An earth oven consisted of a large, shallow pit in which a fire is built. As the fire turned to hot coals, a layer of stones was laid down. Bundles of food, often wrapped in leaves, are laid on the stones then covered with soil to cook slowly. These cooking techniques worked well for centuries.

About 2,000 years ago people began to eat more seeds. At first they probably roasted the seeds and then ground them to make a paste or flour. Some of the seeds may have found their way into stone-boiled soups. Boiling seeds helps release the nutrients they contain, but as we all know, it can take a fair amount of

boiling to make seeds and grains edible. Stone boiling was not the best technique because seeds and grains require cooking at low heat for a long time before they are palatable. That's where ceramic pots come in.

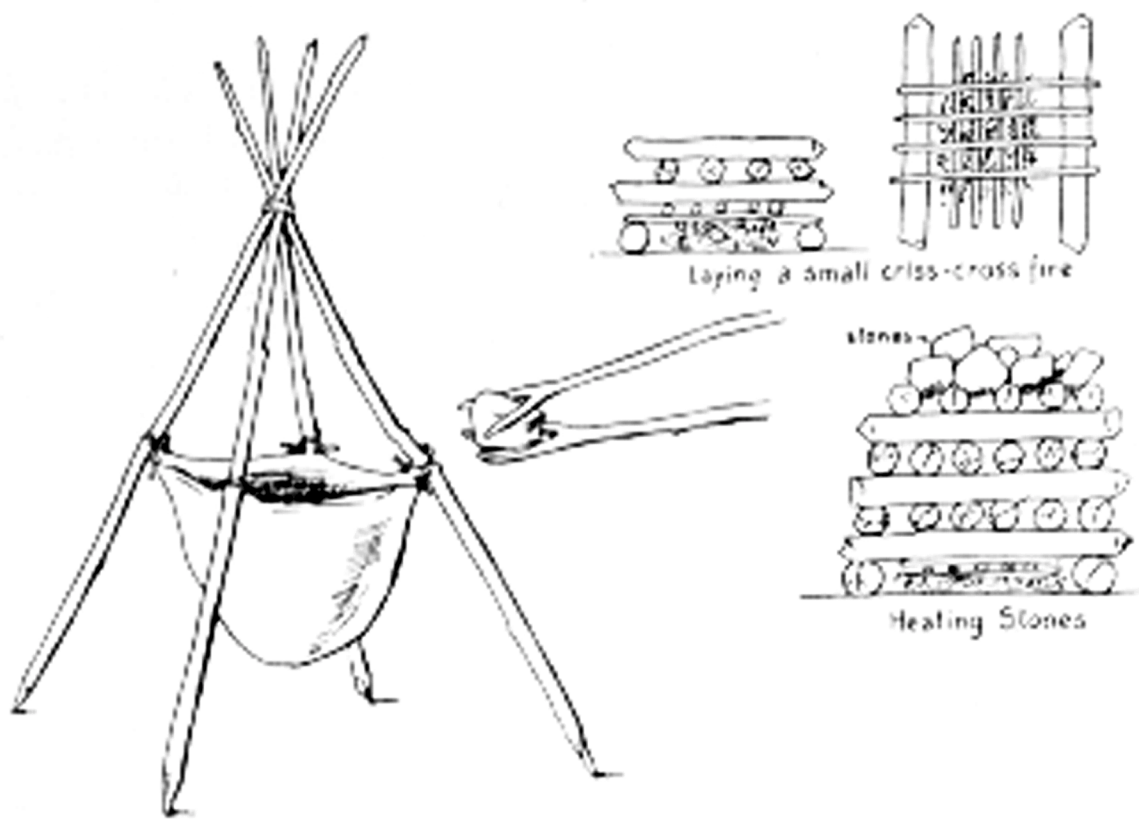
### *Now We're Cooking*

The earliest pots probably were used for stone boiling. The thick pottery sherds found at the Nebo Hill site, just across the Missouri River north of Kansas City, Missouri, are the remains of the earliest pottery known in the region and are around 3,000 years old. The thick, porous pots represented by these sherds would perform poorly over an open fire. Their thickness and open pores would insulate the food inside the pot from the fire. On the other hand, they would be great for stone boiling because the insulating properties of those thick, porous walls would keep the heat of the boiling stones in with the food.

As people continued to make pottery, they tinkered with the process, and as a result the pots became harder, thinner and less porous. Not coincidentally we

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*This article is the third and final article in a series on prehistoric agriculture prepared by State Archeologist Bob Hoard.*



(Left) The illustration shows the boiling stone method of cooking foods, used before the development of pottery cookware. Food was roasted over a fire in a skin bag along with water and hot stones.

(Below) A fired clay figurine from the 5,000 year old William Young site.



find that these later pots sometimes have the charred remains of food on the inside, an indication that some high-temperature cooking was going on. These thinner pots were filled with food and set on the fire to simmer. This technique is exactly what we would expect for people cooking seeds and grains. Once people started growing seed crops, clay pots became a more attractive cooking option.

As time went on, potters continued to refine their craft. People using pots every day probably had their favorites. They noticed that some clays made a stronger pot than others – an important consideration when dinner is on the line. Some additives worked better, too. Clay with large gravels added to it tended to crack after going through several cooking events of heating and cooling, but sandy clays held up better.

People added lots of things to clay to try to improve the properties of their cooking pots: plant fibers, sand, crushed granite or limestone, crushed and fired mussel shell. Even broken pots were crushed and added to the clay of new pots. Some of these additives, called temper, were better than others. Clay that has fired, ground shell added to it makes a very thin, very strong pot. This

*In the past two issues of Kansas Preservation, we've heard about the first farmers in Kansas and about the tools they made to plant, nurture, harvest, and process the foods they grew. In this issue, the focus turns to the most important tool associated with early farming – the ceramic cooking pot.*

is because fired shell breaks into thin little platelets. When a new pot is fired, the clay bonds tightly to these platelets, and they serve to stop the microscopic cracks that form when a pot is heated and cooled repeatedly. Another advantage to shell temper is that it makes sticky clays easier to work. It's no accident that once shell temper caught on, we find a larger variety of vessel shapes.

Shell-tempered pots are an interesting case, because adding shell to clay also causes serious problems. If the shell gets too hot during firing or cooking, it turns to lime. Upon cooling, the lime absorbs moisture from the air and ex-

pands, causing the pot to crumble. Recent archeological experiments suggest that potters learned to control this problem by adding salt to the clay, regulating firing temperatures, or denying air to the pot when it is being fired, all of which help to control this problem. Clearly, prehistoric potters were astute observers

and took care in their craft to strike a balance between the problems and the benefits of adding shell to pottery.

Archeologists have noticed that there are many more sites when farming comes on the scene – an indication of larger populations. They

also find more evidence of malnutrition. Apparently a wild diet offered more of what people need. So why the apparent population increase? It may be that gruels made from cultivated plant seeds cooked in clay pots were used to wean babies earlier, allowing for larger families. So in the end, there are more people, albeit less healthy individuals.

The next time you fire up the crock pot for a twelve-hour cook down, think about the potters from a thousand years ago. That crock pot is a continuation of the technology that came along with farming and transformed the way people lived forever.